



Interoperable Montana Needs & Requirements Analysis

Northrop Grumman Information Technology

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Analysis Objectives

- **Assist the Project Directors in:**
 - **Determining the mission critical needs for interoperability**
 - **Prioritizing projects based on the identified mission critical needs**
 - **Developing a plan for implementation**



Analysis Overview

- Review Needs Assessments of each Consortium
- Identified high level categories
- Identified sub-categories
- Attached each need to its respective category



From this exercise we were able to:

- Identify issues and needs that are common across Montana
- Identify issues and needs that are unique to a particular consortium



Categories

- Coverage
- Infrastructure
- Interoperability Needs
- Funding
- Subscribers
- Capacity
- E911
- Dispatch
- Frequencies/Licenses
- Design
- Encryption
- Operations
- Training
- Implementation



Coverage

Description:

- The actual footprint of the system. The areas of a balanced system where radios can both receive and transmit.

Includes:

Portable, Mobile, In-Building, Pagers, MDT



Infrastructure

Description:

- The portion of a public safety communications system that provides the service portion of the system; the system that subscriber units connect into.

Includes:

Tower, Building, Grounding, Generator/Backup Power, Electrical Protection, Survivability, Redundancy, Voice Repeater, Paging Repeater, MDT Repeater, Physical Security



Interoperability Needs

Description:

- The ability to communicate interoperably between public safety responders in daily use as well as during an emergency response.

Includes:

Within an Agency, Across Multiple Agencies, Across Counties, Across Local/State/Federal/Private, Across State, International, Across Bands



Funding

Description:

- The ability to implement the public safety communications system. Affects scope, design and timelines.

Includes:

Local, State, Federal, Procurement, Maintenance, Staffing, Training



Subscribers

Description:

- The portion of a public safety communications system that is utilized by public safety responders; the radio that connects into the infrastructure.

Includes:

Voice, Pagers, Mobile Data Terminals



Capacity

Description:

- The ability of a public safety communications system to accommodate the volume demands of public safety responders, in daily use as well as an emergency response.

Includes:

Voice, Pagers, Mobile Data Terminals



E911

Description:

- The enhanced capabilities of the 911 Public Safety Access Point (PSAP)



Dispatch

Description:

- The communication point for command and control management of public safety resources.

Includes:

Standard Operating Procedures, Capabilities, Backup, Equipment, CAD



Frequencies/Licenses

Description:

- The physical radio spectrum and bandwidth the public safety communication system operates under.

Includes:

Narrowbanding, Digital / P25, Analog, Dynamic Frequency Assignment, Frequency Plan, Licensing / Coordination



Design

Description:

- Collectively, the blueprint of the public safety communications system that meets the requirements of the users of the system.

Includes:

Spectrum Choice, Patching, Expandability, Maintainability, Flexibility, Reliability, Simplicity, SIEC, Compatability, Backbone, Trunking, Vote Steer, Conventional, Seamless Roaming, Embedded, signaling, Ground-to-Air, Internet, Mobile Command, GPS/AVL, Sirens, Cell Phones, Paging



Encryption

Description:

- The means by which the public safety communications system provides for secure communication by scrambling the transmissions

Includes:

Key Management, Local Key Scheme, Shared Key Scheme



Operations

Description:

- Collectively, the policies and procedures which determine how the public safety communication system operates on a local, state, regional and international level.

Includes:

Standard Operating Procedures, Communications Plan, MOU / LOA, ICS, Reporting, Maintenance, Governance, Inventory/Asset Management, Channel Scan



Training

Description:

- Collectively, a program to ensure public safety responders are familiar with the equipment, policies and procedures for communication tasks.

Includes:

Standard Operating Procedures, Communications Plan, Equipment



Implementation

Description:

- The process of deploying the designed public safety communications system.

Includes:

Short Term, Medium Term, Long Term



IM Analysis

- 20% - Design
- 15% - Infrastructure
- 13% - Coverage
- 7% - Subscribers
- 18% - Dispatch / Operations / Training



Consortia Breakdown

	15-90	CMICC	ETIC	Big Sky 11	WICC	SCMICC	NTIP	Tri- County
Coverage	13%		25%		13%			11%
Infrastructure						49%	11%	
Interoperability		10%		13%				
Subscribers	13%		11%		12%			
Capacity	15%				12%			
Frequencies				23%			10%	
Design		12%	12%	19%		17%	49%	23%
Operations		24%				8%		15%
Dispatch / Operations / Training	13%	34%	19%	10%	21%	12%	2%	27%



Translation

- Design – Long Term
- Infrastructure – Old and new sites properly installed with good equipment
- Coverage – New sites
- Subscribers – New / Additional radios
- Dispatch / Operations / Training – “Soft” Deliverable



Budgetary

- **New Sites**
 - \$476,000 - Trunked, 4-Channel, 1 Microwave Hop
 - \$230,000 – Non-Trunked, 1-Channel
- **New Repeaters**
 - \$14,000 – Trunking-Upgradeable
 - \$2,000 – Frequency Licensing per Channel
- **New Radios**
 - \$1,500 – P25 Narrowband, Trunking-Upgradeable
 - \$3,000 – P25 Narrowband, Trunking
 - \$5,000 – P25 Narrowband, Trunking, Encrypted



Considerations

- **Improving Communications**
 - Infrastructure
 - Coverage
 - Subscribers
 - Dispatch / Operations / Training
- **Maintaining Partnerships**
 - Backbone
 - Shared Sites
- **Positioning for Future Funding**
 - Successful Track Record

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DEFINING THE FUTURE



Next Steps